

REMARKS/ARGUMENTS

Applicant has carefully reviewed and considered the Examiner's Answer to the Appeal Brief mailed on December 11, 2006, and the references cited therewith.

Claims 1, 3, 9, 11, 28, 34, and 36 are amended, claims 2, 10, 15-27, 31-33, and 35 are canceled, claims 4-6, 12-13, and 37-39 are withdrawn, and no claims are added; as a result, claims 1, 3-9, 11-14, 28-30, 34, and 36-40 are now pending in this application.

§ 102 Rejection of the Claims

Claims 1, 7-9, 14, 28-30, 34, and 40 were rejected under 35 USC § 102(b) as being anticipated by Cillessen, et al. (U.S. Patent No. 5, 744, 864). Applicant respectfully traverses the rejection as follows.

The Cillessen reference appears to teach, "The dopant atoms are attuned to the covalent oxides used. Dopant atoms such as Sb, F, or Cl may thus be used when SnO₂ is the covalent oxide, Sn dopant atoms for In₂O₃, and Ga dopant atoms for ZnO as the oxide." (Col. 2, lines 25-29; also see col.5, lines 54-60). Cillessen does not teach any gallium oxides doped with any atoms; thus, Cillessen does not teach gallium oxide Ga₂O₃ with dopant selected from a group consisting of oxygen vacancies Si and Ge.

In contrast, Applicant's independent claims 1 and 34, as amended, presently recite, "a channel contacting the drain electrode and the source electrode, wherein the channel includes gallium oxide Ga₂O₃ with dopant selected from a group consisting of oxygen vacancies Si and Ge".

Support for the amendment of claims 1 and 34 to recite the specified dopants is found in the specification of the present disclosure as originally filed. Specifically, the specification recites, "Doping of one or more of the layers (e.g., the channel illustrated in Figure 2) may also be accomplished by the introduction of oxygen vacancies and/or substitution of aliovalent elements such as Si, Ge, Sn, F, and N." (Page 8, lines 30-33). Although, as previously stated, Cillessen does not appear to teach any dopants to be used with any gallium oxides, Applicant has

removed Sn, F, and N from the group of dopants recited in claims 1 and 34, as amended, in the interest of advancing prosecution of the present application.

Independent claim 9, as amended, recites:

means for carrying electron flow to electrically couple the drain electrode and the source electrode, wherein the means for a channel includes means for Ga₂O₃ with dopant selected from a group consisting of oxygen vacancies Si and Ge;

In addition, independent claim 28, as amended, recites:

providing a precursor composition including one or more compounds of a gallium precursor compound, wherein the means for a channel includes means for Ga₂O₃ with dopant selected from a group consisting of oxygen vacancies Si and Ge;

As such, Applicant respectfully submits that each and every element and limitation of independent claims 1, 9, 28, and 34, as amended, is not taught in the Cillessen reference. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 102 rejection of independent claims 1, 9, 28, and 34, as well as those claims that depend therefrom.

§ 103 Rejection of the Claims

Claims 2-3, 10-11, 35, and 36 were rejected under 35 USC § 103(a) as being unpatentable over Cillessen, et al. (U.S. Patent No. 5, 744, 864) in view of Ueda, et al. (reference 7Q). Applicant respectfully traverses the rejection as follows.

Claims 3, 11, and 36 depend from independent claims 1, 9, and 34, respectively. Applicant respectfully submits that independent claims 1, 9, and 34, as amended, are in condition for allowance. From Applicant's review of the Ueda reference, the reference does not cure the deficiencies of the Cillessen reference. That is, Ueda does not teach or suggest, "Ga₂O₃ with dopant selected from a group consisting of oxygen vacancies Si and Ge", as recited in independent claims 1, 9, and 34, as amended.

As such, Applicant respectfully submits that each and every element of independent claims 1, 9, and 34 is not taught or suggested in the Cillessen and Ueda references, either independently or in combination. Accordingly, Applicant

respectfully requests reconsideration and withdrawal of the § 103 rejection of dependent claims 3, 11, and 36, which depend therefrom.

Claims 2, 10, and 35 are canceled.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney Gregg W. Wisdom at (360) 212-8052 to facilitate prosecution of this matter.

At any time during the pendency of this application, please charge any additional fees or credit overpayment to the Deposit Account No. 08-2025.

CERTIFICATE UNDER 37 CFR §1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: **MS AMENDMENT** Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450 on this 5th day of March, 2007.

Alison L. Suber
Name

AL
Signature

Respectfully Submitted,
Randy L. Hoffman

By his Representatives,
BROOKS & CAMERON, PLLC
1221 Nicollet Avenue, Suite 500
Minneapolis, MN 55403

By: [Signature]
Jeffery L. Cameron
Reg. No. 43,527

Date: 3/5/07